

**WEST**

Generate Collection

Print

**Search Results - Record(s) 1 through 3 of 3 returned.**☐ 1. Document ID: US 6451573 B1

L2: Entry 1 of 3

File: USPT

Sep 17, 2002

US-PAT-NO: 6451573

DOCUMENT-IDENTIFIER: US 6451573 B1

TITLE: Proteinase inhibitor, precursor thereof and genetic sequences encoding same

DATE-ISSUED: September 17, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Marilyn Anne	Keilor			AU
Atkinson; Angela Hilary	Montrose			AU
Heath; Robyn Louise	Williamstown			AU
Clarke; Adrienne Elizabeth	Parkville			AU

US-CL-CURRENT: 435/213, 435/219, 435/252.3, 435/320.1, 435/69.1, 536/23.1, 536/23.2, 536/23.6, 800/278, 800/295

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
Draw Desc	Image										

☐ 2. Document ID: US 6261821 B1

L2: Entry 2 of 3

File: USPT

Jul 17, 2001

US-PAT-NO: 6261821

DOCUMENT-IDENTIFIER: US 6261821 B1

TITLE: Proteinase inhibitor, precursor thereof and genetic sequences encoding same

DATE-ISSUED: July 17, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Marilyn Anne	Keilor			AU
Atkinson; Angela Hilary	Montrose			AU
Heath; Robyn Louise	Williamstown			AU
Clarke; Adrienne Elizabeth	Parkville			AU

US-CL-CURRENT: 435/219, 435/213, 435/252.3, 435/320.1, 435/69.1, 536/23.1, 536/23.2, 536/23.6, 800/279

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
Draw Desc	Image										

☐ 3. Document ID: US 6031087 A

L2: Entry 3 of 3

File: USPT

Feb 29, 2000

US-PAT-NO: 6031087

DOCUMENT-IDENTIFIER: US 6031087 A

TITLE: Proteinase inhibitor, precursor thereof and genetic sequences encoding same

DATE-ISSUED: February 29, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Marilyn Anne	Keilor			AU
Atkinson; Angela Hilary	Montrose			AU
Heath; Robyn Louise	Williamstown			AU
Clarke; Adrienne Elizabeth	Parkville			AU

US-CL-CURRENT: 536/23.2; 435/213, 435/219, 435/252.3, 435/320.1, 435/69.1, 536/23.6, 800/279

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw	Desc	Image								

Generate Collection

Print

Terms

Documents

6031087

3

**Display Format:**

CIT

Change Format

[Previous Page](#)[Next Page](#)

**WEST**

Generate Collection

Print

L2: Entry 1 of 3

File: USPT

Sep 17, 2002

US-PAT-NO: 6451573

DOCUMENT-IDENTIFIER: US 6451573 B1

TITLE: Proteinase inhibitor, precursor thereof and genetic sequences encoding same

DATE-ISSUED: September 17, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Marilyn Anne	Keilor			AU
Atkinson; Angela Hilary	Montrose			AU
Heath; Robyn Louise	Williamstown			AU
Clarke; Adrienne Elizabeth	Parkville			AU

US-CL-CURRENT: 435/213; 435/219, 435/252.3, 435/320.1, 435/69.1, 536/23.1, 536/23.2, 536/23.6, 800/278, 800/295

## CLAIMS:

What is claimed is:

1. A recombinant type II serine proteinase inhibitor (PI) precursor, wherein said PI precursor comprises at least three PI monomers covalently linked to each other, at least one of the monomers has a chymotrypsin specific site and at least one other of the monomers has a trypsin specific site, and wherein said precursor comprises an amino acid sequence as set forth in SEQ ID NO: 3.
2. A monomer of the PI precursor according to claim 1, wherein said monomer comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, and SEQ ID NO: 10.
3. A monomer of the PI precursor according to claim 1, wherein said monomer comprises an amino acid sequence as set forth in SEQ ID NO: 4.
4. A monomer of the PI precursor according to claim 1, wherein said monomer comprises an amino acid sequence as set forth in SEQ ID NO: 5.
5. A monomer of the PI precursor according to claim 1, wherein said monomer comprises an amino acid sequence as set forth in SEQ ID NO: 6.
6. A monomer of the PI precursor according to claim 1, wherein said monomer comprises an amino acid sequence as set forth in SEQ ID NO: 7.
7. A monomer of the PI precursor according to claim 1, wherein said monomer comprises an amino acid sequence as set forth in SEQ ID NO: 8.
8. A monomer of the PI precursor according to claim 1, wherein said monomer comprises an amino acid sequence as set forth in SEQ ID NO: 9.
9. A monomer of the PI precursor according to claim 1, wherein said monomer

comprises an amino acid sequence as set forth in SEQ ID NO: 10.

**WEST**

Generate Collection

Print

L2: Entry 2 of 3

File: USPT

Jul 17, 2001

US-PAT-NO: 6261821

DOCUMENT-IDENTIFIER: US 6261821 B1

TITLE: Proteinase inhibitor, precursor thereof and genetic sequences encoding same

DATE-ISSUED: July 17, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Marilyn Anne	Keilor			AU
Atkinson; Angela Hilary	Montrose			AU
Heath; Robyn Louise	Williamstown			AU
Clarke; Adrienne Elizabeth	Parkville			AU

US-CL-CURRENT: 435/219; 435/213, 435/252.3, 435/320.1, 435/69.1, 536/23.1, 536/23.2, 536/23.6, 800/279

## CLAIMS:

What is claimed is:

1. An isolated protease-sensitive peptide comprising SEQ ID NO:16  
XCPXXEEKKNDRICTNCCAGXKG (SEQ ID NO:16).
2. An isolated protease-sensitive peptide comprising residues 2-23 of SEQ ID NO:16.
3. An isolated protease-sensitive peptide comprising residues 6-11 of SEQ ID NO:16.
4. An isolated protease-sensitive peptide comprising residues 6-20 of SEQ ID NO:16.
5. An isolated nucleic acid molecule encoding the peptide of any one of claims 1-4.

**WEST****End of Result Set**

Generate Collection

Print

L2: Entry 3 of 3

File: USPT

Feb 29, 2000

US-PAT-NO: 6031087

DOCUMENT-IDENTIFIER: US 6031087 A

TITLE: Proteinase inhibitor, precursor thereof and genetic sequences encoding same

DATE-ISSUED: February 29, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Marilyn Anne	Keilor			AU
Atkinson; Angela Hilary	Montrose			AU
Heath; Robyn Louise	Williamstown			AU
Clarke; Adrienne Elizabeth	Parkville			AU

US-CL-CURRENT: 536/23.2; 435/213, 435/219, 435/252.3, 435/320.1, 435/69.1, 536/23.6, 800/279

## CLAIMS:

We claim:

1. An isolated nucleic acid comprising a sequence of nucleotides which encodes or is complementary to a sequence which encodes a type II serine proteinase inhibitor (PI) precursor from a plant wherein said isolated nucleic acid has the nucleotide sequence set forth in SEQ ID NO:1 or hybridizes to the nucleotide sequence set forth in SEQ ID NO:1 under the conditions of at least one of 4.times.SSC at room temperature, 2.times.SSC at room temperature, 1.times.SSC at 40.degree. C., 2.times.SSC with 0.1% w/v SDS at 68.degree. C., or 0.2.times.SSC with 1% w/v SDS at 68.degree. C., wherein said precursor comprises at least three PI monomers and wherein at least one of said monomers has a chymotrypsin specific site and at least one of said monomers has a trypsin specific site.
2. An isolated nucleic acid according to claim 1 wherein said PI precursor comprises at least four monomers.
3. An isolated nucleic acid according to claim 1 wherein the PI precursor comprises at least five monomers.
4. An isolated nucleic acid according to claim 1 wherein the PI precursor comprises at least six monomers.
5. An isolated nucleic acid comprising a sequence of nucleotides according to claim 1 which encodes or is complementary to a sequence which encodes a single type II serine proteinase inhibitor (PI) having either a chymotrypsin specific site or a trypsin specific site and wherein said PI is a monomer of a precursor PI having at least three monomers of which at least one of said monomers has a chymotrypsin site and the other of said monomers has a trypsin site.
6. An isolated nucleic acid according to claim 1 or claim 5 which encodes a

peptide selected from the group consisting of SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO: 8, SEQ ID NO:9, or SEQ ID NO:10.

7. A method of increasing or enhancing resistance of a plant to insect or other pathogen infestation, said method comprising introducing a nucleic acid molecule as defined in any one of claims 1, 2, 3, 4, or 5 into a cell or group of cells of said plant, regenerating a plant therefrom and growing said plant for a time and under conditions sufficient to permit expression of said nucleic acid into a proteinase inhibitor (PI) or precursor thereof which inhibits growth and infestation by said pathogen.

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 1 of 1 returned.**☐ 1. Document ID: US 6440727 B1

L1: Entry 1 of 1

File: USPT

Aug 27, 2002

US-PAT-NO: 6440727

DOCUMENT-IDENTIFIER: US 6440727 B1

TITLE: Proteinase inhibitor, precursor thereof and genetic sequences encoding same

DATE-ISSUED: August 27, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Marilyn Anne	Keilor			AU
Atkinson; Angela Hilary	Montrose			AU
Heath; Robyn Louise	Williamstown			AU
Clarke; Adrienne Elizabeth	Parkville			AU

US-CL-CURRENT: 435/320.1; 435/213, 435/219, 435/252.3, 435/69.1, 536/23.1, 536/23.2, 536/23.6, 800/278, 800/295

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

[Generate Collection](#)[Print](#)

Terms	Documents
6440727	1

**Display Format:** [CIT](#)[Change Format](#)[Previous Page](#)[Next Page](#)



**WEST****End of Result Set**

Generate Collection

Print

L1: Entry 1 of 1

File: USPT

Aug 27, 2002

US-PAT-NO: 6440727

DOCUMENT-IDENTIFIER: US 6440727 B1

TITLE: Proteinase inhibitor, precursor thereof and genetic sequences encoding same

DATE-ISSUED: August 27, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Marilyn Anne	Keilor			AU
Atkinson; Angela Hilary	Montrose			AU
Heath; Robyn Louise	Williamstown			AU
Clarke; Adrienne Elizabeth	Parkville			AU

US-CL-CURRENT: 435/320.1; 435/213, 435/219, 435/252.3, 435/69.1, 536/23.1, 536/23.2, 536/23.6, 800/278, 800/295

## CLAIMS:

What is claimed is:

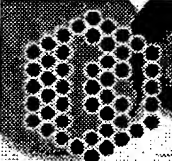
1. A genetic construct comprising a nucleotide sequence which encodes or is complementary to a sequence which encodes a type II serine proteinase inhibitor (PI) precursor from a plant or monomer of said PI precursor, wherein said nucleotide sequence is a sequence as set forth in SEQ ID NO: 1 or a sequence which hybridizes to the complement sequence of SEQ ID NO: 1 under the conditions of at least one of 4.times.SSC at room temperature, 2.times.SSC at room temperature, 1.times.SSC at 40.degree. C., 2.times.SSC with 0.1% w/v SDS at 68.degree. C., or 0.2.times.SSC with 1% w/v SDS at 68.degree. C., wherein said precursor comprises at least three PI monomers and wherein at least one of said monomers has a chymotrypsin specific site and at least one of said other monomers has a trypsin specific site, and wherein said genetic construct further comprises expression means to permit expression of said nucleotide sequence, replication means to permit replication in a plant cell, or integration means to permit stable integration of said nucleotide sequence into a plant cell genome.

2. A transgenic plant carrying a genetic construct, said genetic construct comprising a nucleotide sequence which encodes or is complementary to a sequence which encodes a type II serine proteinase inhibitor (PI) precursor from a plant or monomer of said PI precursor, wherein said nucleotide sequence is a sequence as set forth in SEQ ID NO: 1 or a sequence which hybridizes to the complement sequence of SEQ ID NO: 1 under the conditions of at least one of 4.times.SSC at room temperature, 2.times.SSC at room temperature, 1.times.SSC at 40.degree. C., 2.times.SSC with 0.1% w/v SDS at 68.degree. C., or 0.2.times.SSC with 1% w/v SDS at 68.degree. C., wherein said precursor comprises at least three PI monomers and wherein at least one of said monomers has a chymotrypsin specific site and at least one other of said monomers has a trypsin specific site.

3. The transgenic plant according to claim 2 wherein said transgenic plant

produces one or more PI monomers selected from the group consisting of SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9 and SEQ ID NO: 10.

4. The transgenic plant according to claim 2 wherein said transgenic plant produces a PI monomer consisting of SEQ ID NO: 4.



# EMBL-EBI

European Bioinformatics Institute

Get  Nucleotide sequences for

[EBI Home](#)
[About EBI](#)
[Research](#)
[Services](#)
[Toolbox](#)
[Databases](#)
[Downloads](#)

ANALYSIS TOOLS

## EBI Generic DB Entry Retrieval

```

ID   AF105340   standard; RNA; PLN; 846 BP.
XX
AC   AF105340;
XX
SV   AF105340.1
XX
DT   01-DEC-1999 (Rel. 61, Created)
DT   12-MAY-2000 (Rel. 63, Last updated, Version 2)
XX
DE   Nicotiana alata proteinase inhibitor precursor, mRNA, complete cds.
XX
KW   .
XX
OS   Nicotiana alata (Persian tobacco)
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Asteridae;
OC   euasterids I; Solanales; Solanaceae; Nicotiana.
XX
RN   [1]
RP   1-846
RX   MEDLINE; 20252525.
RA   Miller E.A., Lee M.C.S., Atkinson A.H.O., Anderson M.A.;
RT   "Identification of a novel four-domain member of the proteinase inhibitor
RT   II family from the stigmas of Nicotiana alata";
RL   Plant Mol. Biol. 42(2):329-333(2000).
XX
RN   [2]
RP   1-846
RA   Miller E.A., Atkinson A.A., Anderson M.A.;
RT   ;
RL   Submitted (10-NOV-1998) to the EMBL/GenBank/DDBJ databases.
RL   Biochemistry, LaTrobe University, Plenty Rd, Bundoora, Vic 3083, Australia
XX
DR   GOA; Q9SQ77; Q9SQ77.
DR   SPTREMBL; Q9SQ77; Q9SQ77.
XX
FH   Key          Location/Qualifiers
FH
FT   source          1..846
FT                   /db_xref="taxon:4087"
FT                   /organism="Nicotiana alata"
FT                   /tissue_type="stigma"
FT   CDS             1..846
FT                   /codon_start=1
FT                   /db_xref="GOA:Q9SQ77"
FT                   /db_xref="SPTREMBL:Q9SQ77"
FT                   /note="Na-PI IV"

```

```

FT      /product="proteinase inhibitor precursor"
FT      /protein_id="AAF14181.1"
FT      /translation="MAAHRVSFLALLLLFGMSLLVSNVEHADAKACTLNCDPRIAYGV
FT      PRSEEEKNDRICTNCCAGTKGCKYFSDDGTFVCEGESDPRNPKACTLNCDPRIAYGVC
FT      RSEEEKNDRICTNCCAGTKGCKYFSDDGTFVCEGESDPRNPKACPRNCDPRIAYGICP
FT      SEEEKNDRICTNCCAGKKGCKYFSDDGTFVCEGESDPRNPKACPRNCDGRIAYGICPL
FT      EEKKNDRICTNCCAGKKGCKYFSDDGTFICEGESEYASKVDEYVGEVENDLQKSKVAV
FT      "
XX
SQ

```

```

Sequence 846 BP; 248 A; 145 C; 219 G; 234 T; 0 other;
atggctgctc acagagttag tttccttgct ctccctctct tatttggaat gtctctgctt      6
gtaagcaatg tggaaacatgc agatgccaag gcttgtagct taaactgtga tccaagaatt      12
gcctatggag tttgcccgcg ttcagaagaa aagaagaatg atcggatatg caccaactgt      18
tgcgaggca cgaagggttg taagtacttc agtgatgatg gaacttttgt ttgtgaagga      24
gagtctgata ctagaaatcc aaaggcttgt accttaaact gtgatccaag aattgcctat      30
ggagtttgcc cgcgttcaga agaaaagaag aatgatcgga tatgcaccaa ctgttgtgca      36
ggcaccaagg gttgtaagta cttcagtgat gatggaactt ttgtttgtga aggagagtct      42
gatacctaaa atccaaaggc ttgtcctcgg aattgcgata caagaattgc ctatgggatt      48
tgcccacttt cagaagaaaa gaagaatgat cggatatgca ccaactgttg cgcaggcaaa      54
aagggtctga agtacttttag tgatgatgga acttttgttt gtgaaggaga gtctgatcct      60
agaaatccaa aggcctgtcc tcggaattgt gatggaagaa ttgcctatgg aatttgccca      66
ctttcagaag aaaagaagaa tgatcgata tgcaccaatt gttgcgcagg caagaagggc      72
tgtaagtact ttagtgatga tggaaacttt atttgtgaag gagaatctga atatgccagc      78
aaagtggatg aatatgttgg tgaagtggag aatgatctcc agaagtccaa ggttgctggt      84
tcctaa

```

//

---

Please contact [support@ebi.ac.uk](mailto:support@ebi.ac.uk) with any problems or suggestions regarding this site.